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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,906	12/16/2003	Byung-Seok Soh	Q77082	3892
23373	7590	12/14/2005	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			SUNDARARAMAN, VIKRAM P	
			ART UNIT	PAPER NUMBER
			3736	

DATE MAILED: 12/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/735,906

Applicant(s)

SOH ET AL.

Examiner

Vikram P. Sundararaman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. **Claims 5, 7, 8, 9 and 10** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. **Claim 5** recites, "... the coil unit is wound about a finger" [Claim 5, Lines 1-2]. **Claim 7** recites, "...the switch is mounted on a predetermined joint of a user's finger" [Claim 7, Lines 1-2]. **Claim 8** recites, "... the switch is mounted on a predetermined joint of a user's finger" [Claim 8, Lines 1-2]. **Claim 9** recites, "... the switch is installed between a user's adjacent finger" [Claim 9, Lines 1-2]. **Claim 10** recites, "... the switch is installed on a user's finger" [Claim 10, Lines 1-2]. In each instance, the human body is non-statutory subject matter and cannot positively be claimed. To overcome this rejection, for example, Lines 1-2 of Claim 5 should be replaced with "... the coil unit can be adapted to be wound about a finger."

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. **Claims 1 – 6** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ullman et al, US 5,488,362 (hereinafter referred to as Ullman), in view of Ishikawa et al, US 6,261,247 B1 (hereinafter referred to as Ishikawa).

5. **As to Claim 1**, Ullman teaches an “apparatus for controlling a video game” (apparatus for detecting finger motion) with a “plurality of detectors... for detecting hand directional movement” and “a signal generator” (finger motion detecting unit, which determines whether or not finger-motion exists and generates the finger-motion signal corresponding to the finger motion) [Column 3, Lines 1-11], an electronics module, 100, ... for wirelessly transmitting the commands” (finger-motion signal transmitting unit) [Column 5, Line 21-23], and “a receiver” (a finger-motion receiving unit) [Column 5, Line 37]. Ullman also teaches that the wireless transmission and receiving means may be

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sensitive to infrared signals while noting that other wireless communication techniques, such as radio frequency or ultrasound may also be used. [Column 5, Lines 46-50].

What Ullman fails to teach is the *specific structures* of wireless transmission using radio frequency (RF) wireless means. To this extent, Ishikawa teaches an anatomical position sensing system with "a remote receiver in an external monitoring station", 902, which sends "power by magnetic coupling" [Column 11, Line 47] at a "low frequency RF power signal" [Abstract, Line 11] and receives "transmitting data by RF transmission" [Column 11, Line 46] to transponders (P) and (S), wherein the low frequency RF power signal is used "to energize the transponders." In addition Ishikawa teaches that the transponders subsequently "emit a data signal at a very high RF frequency which is directed at the antenna/coil" of the receiver [Abstract, Lines 11-20]. It is noted that while the specific wireless transmission means detailed by Ullman uses wireless transmission using infrared signals, Ullman further teaches that it is well known in the art that wireless transmission using RF signals may also be used. The specific structure of RF transmission used by Ishikawa is a well known way to use RF signal transmission to both transmit both power and data signals in such a device. Therefore, it would have been obvious for one skilled in the art at the time of the invention to modify Ullman using the teachings of Ishikawa to incorporate wireless powering and data transmission using RF signal means.

6. **As to Claim 2**, the combination of Ullman and Ishikawa discloses the limitations set forth in Claim 1 upon which Claim 2 is dependent. As to Claim 2, Ullman does not

disclose the specifics of wireless transmission means via RF transmission. Ishikawa teaches that “the transponder, 900, includes an antenna/coil”, (coil unit) “which serves the dual purpose of receiving power from the station, 902, and transmitting data on an RF carrier signal to the station, 902. The power may be received by the antenna/coil by direct coupling...” or by “an electromagnetic wave... used to transmit power from the station” [Column 11, Lines 56-61]. Ishikawa further teaches a “control logic, 914, which can be part of an onboard processor that controls the converter, 912” and “a converter, 912, ... used to convert the condition sensed by the transducer to a signal that can be transmitted out to the station, 902” [Column 12, Lines 51-56]. The motivation for this combination remains as disclosed in item number 5. Therefore it would have been obvious for one with ordinary skill in the art at the time of the invention to modify Ullman using the teachings of Ishikawa to incorporate wireless powering and data transmission using RF signal means.

7. **As to Claim 3**, the combination of Ullman and Ishikawa discloses the limitations set forth in Claim 2 upon which Claim 3 is dependent. As to Claim 3, Ishikawa further teaches that “the power signal received by the antenna/coil, 903, is rectified and smoothed by an RF rectifier smoother circuit, 904” (converts an alternating current power generated by the coil unit into a direct current power to generate the predetermined amount of power) [Column 11, Line 66-67]. The motivation for this combination remains as disclosed in item number 5. Therefore it would have been obvious for one with ordinary skill in the art at the time of the invention to modify Ullman

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using the teachings of Ishikawa to incorporate wireless powering and data transmission using RF signal means.

8. **As to Claim 4**, the combination of Ullman and Ishikawa discloses the limitations set forth in Claim 2 upon which Claim 4 is dependent. As to Claim 4, Ishikawa further teaches a "control logic, 914, which can be part of an onboard processor that controls the converter, 912" and "a converter, 912, ... used to convert the condition sensed by the transducer to a signal that can be transmitted out to the station, 902" and "an RF modulator, 918, modulated the output from the converter, 912, onto the carrier frequency signal." (the control unit modulates the finger-motion signal into the finger-motion signal having a predetermined frequency, depending on which finger is moved, and outputs the modulated finger-motion signal) [Column 12, Lines 45-58].

Furthermore, Ullman teaches that "the microprocessor, 84, controls the timing of decoder, 20 for periodically scanning for actuation of the wrist contacts, 2a-5b, and finger contact 7-10" and that "The decoded command is forwarded to a modulator, 80, for FM modulation." (the control unit modulates the finger-motion signal into the finger-motion signal having a predetermined frequency, depending on which finger is moved, and outputs the modulated finger-motion signal) [Column 5, Lines 26-30]. In this way it is inherent that modulation and decoding of finger actuated signals with their respective wrist contact is associated with different predetermined frequencies for the output of the signal with respect to which finger is moved. The motivation for this combination remains as disclosed in item number 5. Therefore it would have been obvious for one

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with ordinary skill in the art at the time of the invention to modify Ullman using the teachings of Ishikawa to incorporate wireless powering and data transmission using RF signal means.

9. **As to Claim 5**, the combination of Ullman and Ishikawa discloses the limitations set forth in Claim 2 upon which Claim 5 is dependent. Claim 5 is rejected as it would have been an obvious matter of design choice to have a coil that is adapted to be placed or wound about a finger, since applicant has not disclosed that adapting the coil to be wound about a finger solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the coil to be integrated with the control chip, as part of the sensor, or in any number of other placements and/or configurations in conjunction with the claimed invention.

10. **As to Claim 6**, the combination of Ullman and Ishikawa discloses the limitations set forth in Claim 1 upon which Claim 6 is dependent. As to Claim 6, Ullman teaches an apparatus for controlling a video game using a hand attachment or glove with sensors for detecting body movement. Ullman further teaches utilization of switches (2a-5b) and "lever actuated switches in place of contacts 2a-5b." (a switch, and is adapted to generate the finger-motion signal when the switch is turned on) [Column 5, Line 1-4]. It is advantageous to incorporate a switch such that the user can have more control when a signal is generated. Therefore it would have been obvious for one with ordinary skill

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in the art at the time of the invention to modify the combination of Ullman and Ishikawa to incorporate wireless data transmission using RF signal means in the form of a switch.

11. **As to Claim 7**, Ullman teaches that "the user angles his wrist, thereby placing his hand at an angle to the forearm. This angle causes a connection between associated direction contacts..." and that "... when any pair of contact are brought together, a connection is made between the signal generator, 11, and converter, 12" (the switch is adapted to be mounted on a predetermined joint of a user's finger and is adapted to generate a finger-motion signal when the switch is turned on by user flexing a joint). [Column 4, Lines 4-14]. The motivation for this combination remains as disclosed in item number 5.

12. **Claims 8-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ullman and Ishikawa as applied to claim 1-7 above, and further in view of Mohri, US 6,515,669 B1 (hereinafter referred to as Mohri).

13. **As to Claim 8, 9, and 10**, the combination of Ullman in view of Ishikawa teaches the features of the present invention as disclosed in Claims 1-7. What they do not teach are various embodiments of a switch to control signal generation. Mohri teaches an operation input device applied to three-dimensional input device. Mohri further teaches that "the operation input device according to appendices (3) and (4) is characterized in that the operation input analysis means comprises a total collision detection means for

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analyzing and determining a collision operation pattern between all fingers and hand and a desk, floor, lap, or the like.” Mohri further teaches that this collision detection means performs as a “virtual switch that can be used in any place using a desk, lap, or the like without requiring any new elements like a switch, the switch input operation can be performed” (adapted to generate the finger-motion signal when the switch is turned on by tapping with finger, when adjacent fingers come in contact with each other or, when a finger and thumb come into contact). Therefore, it would have been beneficial to include any of the switch means taught by Mohri to modify the apparatus described by the combination of Ullman and Ishikawa. It would have been obvious for one with ordinary skill in the art to modify the teachings of Ullman and Ishikawa in further view of the teachings of Mohri at the time of the invention to include the switch mechanisms taught by Mohri.

14. **Claims 11-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ullman, Ishikawa, and Mohri in the above discussed claims as the method claimed follows with the application of the system in Claim 1 and all of its depending claims, Claims 2-10.

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kent et al (US 5,706,026), Kramer (US 6,866,643 B2), Russell (Us 5,481, 265) Vock et al (US2003/0163287 A1), Eng et al. (US 5,638,092), Grimes

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(US 4,414,537), Butler (US 6,154,199), Wambach (US 5,444,462), and Janesch et al. (US 6,091,342).

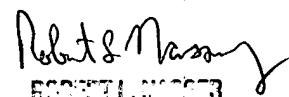
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vikram P. Sundararaman whose telephone number is 571.272.3351. The examiner can normally be reached on M-F, 630am-3pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on 571.272.4726. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VPS


ROBERT L. NASSER
PATENT EXAMINER